

REMARKS

Claims 1-24 are pending in the present application. In the above amendments, claims 1, 7-13 and 19 have been amended. Therefore, after entry of the above amendments, claims 1-24 will be pending in this application. Applicants believe that the present application is now in condition for allowance, which prompt and favorable action is respectfully requested.

Response to Claim Rejections Under 35 U.S.C § 102

Claims 1-24 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Publication No. 20020187793 by Papadimitriou et al. (“Papadimitriou”). The rejection asserts that Papadimitriou allegedly teaches each element of the claims. Reconsideration is respectfully requested of the claims as presented herein in light of the remarks below.

Applicants’ invention is generally directed to paging a target mobile station at a paging area. Independent claims 1, 7, 13 and 19 are directed toward “paging a target mobile station at a paging area that is centered at a cell in which the target mobile station last registered and expands by a predefined number of cells around the cell.” As discussed below, Papadimitriou does not teach or suggest the feature of a paging area that is centered at a cell in which the target mobile station last registered and expands by a predefined number of cells around the cell.

Papadimitriou discloses a system and method of global paging of mobile stations in a wireless network which includes a MSC (“Mobile Switching Center”) pool for servicing mobile stations within a specified service area of the network. Papadimitriou, Abstract. In Papadimitriou, the portion of the application referenced in the Office Action (Para. 33), as well as the following paragraph (Para.34) discloses:

The tree-like structure of the RCDB 70 (“Radio Configuration Database”) represents a geographical grouping of cells for the network service area that allows paging according to a global paging area. ... Since the last known cell in which a subscriber is roaming is known by the network, paging of the subscriber can be performed in the previously located cell by selecting the appropriate location area to which that cell belongs. Moreover, since a subscriber is most likely to have roamed to an area covered by a location within the selected location area, paging is efficiently performed by focusing on those areas where the subscriber is most likely to be located. Therefore, the RCDB 70 provides an efficient and practical way of a paging a subscriber (through their mobile station, of course) within a network utilizing a MSC pool 50.

Referring to FIG. 4, therein is shown the global paging areas 80, 104, 118 of the RCDB 70 in plan form illustrating the arrangement of cells in each paging area 80, 104, 118. During paging, if the MS 28 roams into Cell 1, then the MSC in the pool 50 that handled the call towards MS 28 will try to page the MS 28 within location area 92 to which cell 1 belongs. If, however, no response is received from MS 28, the system will attempt to perform a global page of the MS 28 in all the location areas defined under the RCDB 70 for global paging area 80, namely location area 92 and location area 94, in this example. The RCDB 70, based on the information of the most recent location of the MS 28 (in this case, location area 92) will determine that location area 92 belongs to paging area 80 and will order paging for all location areas belonging to global paging area 80. The decision regarding which MSC area location area 92 belongs is therefore made based on the hierarchal structure of the RCDB 70.

What is discussed is a static tree-like structure with a static list of cells within static location areas, as depicted in Fig. 3 of Papadimitriou. Therefore, a page is sent to a particular cell within the tree structure of the Location Area, as depicted in Fig. 3 and 4, of where the mobile station is thought to be and not *centered* within a paging area. In addition, the page does not expand by a predefined number of cells *around* the cell, as the static tree-like structure is a layered topology, as shown in Fig. 3, and expansion is provided by paging **all** cells within the Location Area, as discussed above. Thus the features of the Applicants’ claims create a more efficient paging system. Papadimitriou therefore does not suggest or teach to “page a target mobile station at a paging area that is centered at a cell in which the target mobile station last registered.”

Papadimitriou also discusses a method for “dynamically defining the bounds of the global paging area according to the roaming activities of the subscriber.” Para. 36. However, even though there is discussion of a center and a radius, it does so relative to the location area, and not “centered at a cell in which the target mobile station last registered.” That is, Papadimitriou describes a using the center of location area for the paging area as follows:

Referring to FIGS. 3 and 5, the RCDB 70 in this case has a similar structure but the global paging areas become dynamically defined by maintaining, for each location area, the coordinates of the center 200 and the radius 204 that defines the geographical area of the location area. The center and radius coordinates are stored in the RCDB 70 such that if the system decides that global paging should be performed for the MS 28, the coordinates of the center 200 and the radius 204 of the location area 92 are read.

Next, the system increases the radius to a new global paging radius 202 and checks which location area centers belong to the new circle 210. The MS 28 will be paged to all the location areas within the circle 210. Thus, if the initial global paging is unsuccessful, then the global paging radius 202 can be further increased and a new global paging can be ordered within the new circle 210.

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In FIG. 5 above, the centers of all neighboring location areas (LA2:LA7) belong to the circle 210 created by the global paging radius 202. Therefore, the system will request paging of the subscriber to all the neighboring location areas (LA2:LA7). An alternative to this idea is to define all the neighboring cell inside the RCDB 70 for each location area. In this case and if global paging is required, the system will find all the neighboring location areas and it will request paging to all of them. Para. 36 - 41.

Therefore Papadimitriou is directed towards the use of the coordinates of the center and radius that define the **geographical area (“center”) of a location area**, not **the center** cell in which the target mobile station last registered. Nowhere does Papadimitrou teach or suggest that the center is at a cell at which the target mobile station last registered. In addition, Papadimitrou shows in Fig. 5 that paging is done in location areas within the entire global paging radius expanded by location areas, not by a predefined number of cells around the “centered” cell. Therefore, Papadimitriou simply does not teach or suggest paging a target mobile station at a

paging area that is centered at a cell in which the target mobile station last registered and expands by a predefined number of cells around the cell, as found in claims 1, 7, 13 and 19.

In view of the foregoing distinctions, Applicants respectfully submit that independent Claims 1, 7, 13 and 19 are patentably distinguished over the cited art. Applicants respectfully submit that Claims 1, 7, 13 and 19 are in condition for allowance, and Applicants respectfully request allowance of Claims 1, 7, 13 and 19.

Claims 2-6, 8-12, 14-18 and 20-24 depend either directly or indirectly from one of the independent claims. Each dependent claim further defines the independent claim from which it depends. In view of the foregoing remarks regarding Claims 1, 7, 13 and 19, Applicants respectfully submit that Claims 2-6, 8-12, 14-18 and 20-24 are likewise in condition for allowance. Applicants respectfully request allowance of dependent Claims 2-6, 8-12, 14-18 and 20-24.

CONCLUSION

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

Dated August 23, 2006

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